

Zircar Zirconia Type BYZ Zirconia Blanks (Project #07-018) (7/09)

Zircar Zirconia Type BYZ zirconia blanks are presintered (green state) zirconia materials intended for use with Cerec CAD CAM systems in the machining of zirconia frameworks for all-ceramic single unit crowns and fixed partial dentures. The Zircar Zirconia Type BYZ blanks have FDA 510K clearance and are said to be fabricated from high-purity powders that are of uniform size and distribution. The Zircar Zirconia Type BYZ blanks are further said to be phase stabilized with 3 mol% yttria while also containing 0.25 wt% alumina to minimize hydrothermal aging. The resultant pressed zirconia blanks are advertised to be composed of fine grain size that will allow accurate machining with tight tolerances. Zircar states that their zirconia materials meet ASTM F1873-98 standards and an Indentceram Sticker is issued with each block.

**Manufacturer:**

Zircar Zirconia, Inc.
P.O. Box 287
Florida, NY 10921-0287
(845) 651-3040
(845) 651-0074 FAX
www.zircarzirconia.com

Suggested Retail Price:

Price Each (\$)	Quantity	Description	Item Number
20.00	1-24	BYZ 20mm x 15mm x 15mm	FAHA001-S
19.00	25-49		
18.00	50+		
47.50	1-9	BYZ 40mm x 15mm x 15mm	FAHA008-S
45.00	10-19		
42.50	20-49		
40.00	50+		
50.00	1-9	BYZ 40mm x 19mm x 15mm	FAHA002-S
47.50	10-19		
45.00	20-49		
42.50	50+		
80.00	1-4	BYZ 55mm x 19mm x 15mm	FAHA004-S
75.00	5-9		
70.00	10+		
160.00	1-4	BYZ 65mm x 25mm x 22mm	FAHA005-S
140.00	5-9		
120.00	10+		

Government Price:

Same as suggested retail

ADVANTAGES

- + Both Knoop and Vickers hardness values similar to other zirconia products
- + Compatible with and easily interfaced with Cerec InLab technology
- + Flexure strength and modulus similar to other zirconia products
- + Accurate predicted sintering volumetric shrinkage
- + Possesses fracture toughness similar to that reported for other zirconia products
- + Atomic force microscopy morphological findings similar to other zirconia products
- + X-ray Diffraction patterns identical to other zirconia products
- + Less expensive than similar zirconia products
- + Indentceram labels supplied with each block

DISADVANTAGES:

- None identified

SUMMARY AND CONCLUSIONS:

The Zircar Zirconia Type BYZ blanks are phase stabilized with 3mol% yttria with 0.25wt% alumina added to minimize hydrothermal aging. In the DECS laboratory, the Type BYZ blanks were compatible with and found to be easily interfaced with the Cerec InLab system. The Zircar Zirconia Type BYZ blanks were found to be morphologically similar to other zirconia products under atomic force microscopy evaluation and possessed similar, if not identical, X-ray diffraction patterns as other marketed stabilized zirconia materials. Sintered Type BYZ materials demonstrated the predicted shrinkage provided by the manufacturer and were found to have Knoop and Vickers hardness values that were similar to other zirconia products. Furthermore, the fully sintered Type BYZ blanks exhibited flexural strength and modulus comparable to other products. Importantly, the Zircar Zirconia materials were found to have ISO 6872 method fracture toughness values at the higher end of the range reported for other zirconia materials. Based on the laboratory analysis, Zircar Zirconia Type BYZ blanks can be considered identical to other marketed zirconia products for Cerec CAD CAM systems. When purchased in bulk, Zircar Zirconia has the potential for significant savings. **Zircar Zirconia Type BYZ Zirconia Blanks** are rated **Outstanding** for use in US Air Force dental facilities.